

## ABSTRACT

The present invention provides an apparatus that can estimate the charge/discharge electricity amount without being affected by current measurement error. If specific selection conditions are met, a no-load voltage calculation part (105) takes a plurality of pairs of data consisting of current data  $I(n)$  and voltage data  $V(n)$  corresponding to the current data and calculates a no-load voltage  $V_{sep}$  as the voltage intercept at a current of zero in a straight-line approximation obtained by statistical processing such as regression analysis using a least squares method with respect to the plurality of pairs of data . In addition, if specific current conditions continue to be met for a certain amount of time, an open circuit voltage calculation part (106) calculates the terminal voltage of the secondary battery as the open circuit voltage  $V_{oc}$ . An estimated charge/discharge electricity amount calculation part (114) uses a preset change-in-voltage adjustment constant  $\Delta V_{bd}$ , adjustment coefficient  $K_b$ , change-in-electromotive-force constant  $K_{eq}$  and polarization voltage generation constant  $K_{pol}$  to calculate the estimated charge/discharge electricity amount  $\Delta Q_e$  as a function of the change  $\Delta V_b$  in the no-load voltage or the open circuit voltage over a predetermined period of time.